

May 29, 1986

CD-86-11 (LD)

Dear Manufacturer:

Subject: Determination of Adjustable ECM Parameters

EPA has determined it is necessary and appropriate to include adjustable electronic control modules (ECM's) as adjustable parameters under the provisions of 40 CFR 86.085-22(e). This determination is effective immediately.

An adjustable or multiple calibration ECM is any ECM which has a rheostat, switch, multiple position plug, or other device which allows the operating parameters or characteristics to be altered without replacing the computer chip.

Paragraph 86.085-22(e) authorizes EPA to determine those vehicle or engine parameters which will be subject to adjustment for emissions testing purposes. Paragraph 86.085-22(e)(1) in turn authorizes EPA to make subject to adjustment any parameter that "was not present on the manufacturer's vehicles (or engines) in the previous model year in the same form or function," after considering the likelihood that the parameter will be set differently from the manner recommended by the manufacturer.

EPA finds that adjustable ECM's are physically capable of being adjusted with little or no damage to the vehicle or part. Further, the Agency finds that adjusting ECM's can significantly affect emissions and that the presence of adjustable ECM's may promote tampering in use. EPA also finds that adjustable ECM'S have not been present on manufacturers' certified vehicles in the previous model year (with one exception described below). Thus, the Agency is exercising its authority under §86.085-22(e) and (e)(1)(i) to make adjustable ECM's immediately subject to adjustment.

EPA is making this determination largely in response to the availability of aftermarket adjustable ECM's (such as the "Johnson Box"). Also, recent vehicle inspections have revealed that certain European vehicles imported by some independent commercial importers (ICIs) employ multiple calibration ECM's to allow for the installations of various emission control systems (e.g., Mercedes 420, European version).

EPA is not aware of the use of such adjustable ECM's on vehicles which have received certificates of conformity to date, with one exception. The technology normally used by original equipment manufacturers (OEMs), as well as by ICIs who have successfully received certificates of conformity, has been sealed computer systems having no adjustable parameters. There

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have been a few cases where manufacturers have provided a switch which allows the driver to choose different modes of operation (e.g., use of different octane fuels). In these cases, EPA has required the manufacturer to demonstrate compliance with emissions standards with the switch in any available position. In one case, however, EPA did not require that a vehicle equipped with an adjustable ECM demonstrate compliance over the available adjustable range, because the Agency was not aware that the ECM was adjustable.

EPA concludes that 40 CFR 86.085-22(e)(1)(ii) does not apply to adjustable ECM's. That section provides a manufacturer with at least two years of lead time where the Agency determines that a parameter which has been used on its previous models is adjustable. The Federal Register notice for the final rule promulgating 40 CFR 86.085-22(e) et seq. makes clear that the minimum lead time provision was intended to apply only to those parameters which EPA had decided not to make subject to adjustment at the time the rule was issued, but might make subject to adjustment in the future.

In promulgating 40 CFR 86.085-22(e) et seq., EPA reviewed all adjustable parameters currently in use and determined which of them should be subject to adjustment immediately. EPA reserved the right to later determine that the other original parameters should also be subject to adjustment, but the Agency provided that manufacturers be given at least two years prior notice in that event, since the determination would require product changes (§86.085-22(e)(1)(ii)).

As for new parameters, EPA noted in the final rule's preamble that "available lead time is completely under the manufacturer's control," and concluded that manufacturers could themselves assure sufficient lead time by seeking EPA's advice regarding

planned parameters before their production (44 FR 2960, 2963; January 12, 1979). The Agency stated that it would "not allow new, maladjustment-prone parameters to begin production just because EPA did not learn of their planned introduction. To do so would negate the general scope of the regulation" (id.). The Agency thus made new parameters (or parameters of which it is newly aware) potentially subject to adjustment when they first appear under §86.085-22(e)(1)(i).

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Clearly, manufacturers that have not previously used adjustable ECM's on their vehicles are not entitled to the lead time provided by §86.085-22(e)(1)(ii). Manufacturers that have used adjustable ECM's on their vehicles are similarly not entitled to that section's minimum lead time, since adjustable ECM's are new parameters and no manufacturer has informed EPA of its intent to use adjustable ECM's prior to certification. It should be noted that the words "any parameter" in §86.085-22(e)(1)(i) were part of a phrase that was inadvertently deleted when the regulations were republished in 1983. The full text of that paragraph is contained in the January 12, 1979 Federal Register notice, where the adjustable parameter rules were first published, and in the 1980 through 1983 editions of the Code of Federal Regulations. (The paragraph was numbered 86.081-22(e)(1)(i).) When the regulations were republished on November 16, 1983, to make changes in other parts of the rules, the words "on carbureted, gasoline-fueled vehicles; or any parameter" were deleted from §86.085-22(e)(1)(i) due to typographical error. The preamble to the November 16, 1983 rulemaking gives no indication of any intent to change the original regulations by deleting the above-quoted words, and the paragraph as it currently appears has no logical meaning with those words deleted. This error will be corrected by technical amendment.

It should also be noted that §86.085-22(e) calls for EPA to determine which parameters are subject to adjustment when the

Agency selects emission-data vehicles for the test fleet. Since EPA has delegated certification vehicle selection to the manufacturers, it no longer selects test fleets. Manufacturers must thus bring new adjustable parameters to EPA's attention before they select their test fleets.

Any manufacturer's vehicles equipped with a multiple calibration or adjustable ECM may be tested at EPA at any point within the adjustable range unless it is adequately sealed. As part of its certification application, the manufacturer must provide a list of adjustable parameters, the physically adjustable range of each parameter, and a description of the method of sealing (if any) to prevent adjustment of in-use vehicles.

Sincerely yours,

Robert E. Maxwell, Director  
Certification Division  
Office of Mobile Sources